

Communicable Diseases Contracted Outside Great Britain

*Prepared by
The Standing Medical Advisory Committee
for the
Central Health Services Council
and the Minister of Health*

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COMMUNICABLE DISEASES CONTRACTED OUTSIDE GREAT BRITAIN

Summary

During recent years the volume of international travel has greatly increased and communicable diseases previously unfamiliar to doctors practising in Great Britain have attracted increasing attention. The traveller who leaves this country may be exposed while abroad to infections which either do not exist here or have become rare. Such infections may be imported into Great Britain by returning travellers by visitors or by immigrants.

The family doctor is frequently asked to advise prospective travellers on the measures which they should take, either before or after proceeding abroad, to protect themselves from infection and, as regards the quarantinable diseases, to comply with the requirements of countries overseas. The family doctor may also be called upon to examine and treat persons in this country who are suffering from infections acquired abroad. Knowledge of some of the more serious communicable diseases likely to be encountered in various parts of the world is essential to the fulfilment of these functions.

Recognition of diseases unusual in Great Britain depends to a large extent on awareness of the possibility of their occurrence. Where any suspicion exists of the presence of a serious communicable disease, expert clinical opinion and appropriate laboratory investigations sought without delay may be vital in the interests either of the patient or of the public health, or of both.

This memorandum offers general guidance to family doctors on the prevention and recognition of communicable diseases contracted outside Great Britain and on their public health implications.

ADVICE TO TRAVELLERS

It is unreasonable to expect the family doctor in Great Britain to give detailed advice to every patient of his who intends to travel abroad. The risks from communicable diseases to which persons may be exposed while abroad will vary with the localities in which they stay or through which they pass, with the duration of their stay, with the conditions under which they live or work and with the occurrence of local or seasonal outbreaks. It is incumbent on the traveller himself to obtain information, applicable to his own particular circumstances, as regards the measures which he should

take to protect himself, and any dependants who may be accompanying him, and to comply with the requirements of countries overseas. Authoritative information can normally be obtained from the embassy or mission of the country to be visited. Most countries, but not all, subscribe to the International Sanitary Regulations. Basic information is given in the Notice to Travellers, which is published by Her Majesty's Stationery Office and can be obtained from the Ministry of Health, the Welsh Board of Health or the Scottish Home and Health Department. The most recent edition of the Notice to Travellers is reproduced as Appendix A to this memorandum.

In general, the traveller in northern Europe, North America, Australia (excluding the northern parts) and New Zealand will be exposed to risks from communicable disease which do not differ greatly, either in nature or degree, from those to which he is exposed in Great Britain. Travellers to Australia or New Zealand will pass through tropical regions where they may meet with other hazards. The traveller in Southern Europe is unlikely to encounter diseases different in kind from those indigenous to Great Britain but may be exposed to increased risks from gastro-intestinal infections, including typhoid and paratyphoid fevers. Throughout the remainder of the world communicable diseases of all kinds, including many which do not occur as indigenous infections in Great Britain, may present important problems to the traveller. A list of some of the more serious communicable diseases, with the regions of the world in which they are likely to be encountered, is contained in Appendix B.

General Precautions

In many parts of the world, especially in rural areas of tropical or sub-tropical countries, the supply of water for drinking and other purposes is likely to be impure and can act as a vehicle for a variety of gastro-intestinal infections. Unless it is known on good authority that the local supply has been properly purified the safest course is to boil all water before it is used for drinking, washing the mouth or cleaning the teeth. Filters for domestic use are available commercially but, even with careful maintenance, it is unwise to rely solely on mechanical methods of purification. Boiling or chemical disinfection after filtration is essential to ensure safety.

In countries where schistosomiasis occurs it is wise to avoid contact, whether by washing, paddling or bathing, with any surface water, such as pools, streams or irrigation channels. The parasite

usually enters the human body by penetration of the intact skin. Hookworm infection likewise is acquired by walking barefoot on contaminated ground.

Milk should be heat-treated, by boiling or pasteurization, before consumption and stored in a cool place. Food should be protected from flies and vermin. In countries where serious gastro-intestinal infections are common, all foods liable to contamination should be well cooked shortly before eating. Raw vegetables and salads in warm countries are potent vehicles for pathogenic organisms, especially in areas where human nightsoil is used as manure for the crops, and should never be eaten in such circumstances. Fruit can be rendered relatively safe if thoroughly washed and then peeled. Underdone meat or fish and raw shellfish should be avoided.

There are numerous insects and other arthropods which act as vectors of disease. In countries where mosquitoes are a nuisance or mosquito-borne infections occur, precautions should be taken to avoid being bitten, by the application of insect repellents to exposed surfaces of the body and by the use of mosquito nets, mosquito screening and insecticides. If malaria is present prophylactic medication should invariably be practised.

Chemosuppression of Malaria

Effective drugs for the prevention or suppression of malaria are available and should be used wherever a possibility exists of acquiring this disease. Even a short exposure in transit, for example at a port or airport in an endemic area, may be sufficient for transmission of the infection to occur.

In most parts of the world proguanil, which is to be taken daily, is the appropriate drug and it is advisable to take other chemosuppressive drugs only when there are special indications to do so. Infants, for whom a tasteless drug may be preferred, may be given a dose of pyrimethamine *weekly*. It should be remembered that the tastelessness of pyrimethamine, which is toxic in large doses, may be a source of danger and the drug should be kept in a safe place well out of reach of children.

The occurrence in some areas of strains of malaria parasite resistant to proguanil and pyrimethamine makes it essential for the traveller to seek authoritative local advice on arrival in any malarious area. That advice may be to take chloroquine (see Table 1) or amodiaquine. Neither of these drugs should be advised for routine use,

since this might further increase the prevalence of strains of parasite resistant to chloroquine, which is one of the very few effective drugs for the treatment of malaria. Quinine is not to be recommended for chemosuppression in areas where falciparum malaria occurs.

Administration of proguanil or pyrimethamine should begin on the day before the first possible exposure to infection and should be continued without interruption until at least one month after the last possible exposure. A suggested schedule of dosage is shown in Table 1. Provided that appropriate chemosuppression is conscientiously maintained it is very unlikely that falciparum malaria, the most serious form of the disease, will develop. In a proportion of persons, once the suppressant action of the drug has ceased, benign tertian or quartan malaria may develop at any time up to one year or more after leaving the infected area.

Table 1

Suggested schedule of dosage of drugs for the chemosuppression of malaria

Proguanil monohydrochloride

Adults	100 mg daily
Children	0- 5 years 25 mg daily
	6-12 „ 50 mg daily

Pyrimethamine

Adults	25 mg weekly
Children	0- 5 years 6.25 mg weekly
	6-12 „ 12.5 mg „

Chloroquine phosphate or sulphate

Adults	phosphate 0.5g weekly or sulphate 0.4g weekly
Children	0- 5 years quarter the above doses
	6-12 years half the above doses

Vaccination

Before proceeding abroad all children should have completed, as far as possible, a basic course of immunization against diphtheria, tetanus, whooping-cough and poliomyelitis with the recommended reinforcing doses according to their ages. It is a wise precaution for persons of any age to be immunized against tetanus, particularly if

they propose to reside in a rural area. Tuberculin negative children and young adults should be protected by B.C.G. vaccination before proceeding to countries where tuberculosis is prevalent.

All persons going to regions of the world where typhoid fever is widespread (See Appendix C) are advised to be effectively vaccinated against typhoid fever. Persons going to visit or reside in any country outside Europe, other than Canada or the United States of America, are advised to be vaccinated also against poliomyelitis, regardless of their age. Those who have already been immunized against poliomyelitis should be offered a reinforcing dose of vaccine.

Apart from the requirements of countries overseas, travellers should, in their own interests, be protected by vaccination or re-vaccination against smallpox, when proceeding to any country in which this disease is likely to occur, and, where indicated, against cholera or yellow fever. Vaccination against any disease other than tuberculosis or yellow fever (see below) can be done by a person's own doctor and, if in pursuance of public policy, will qualify for item of service payment.

International Certificates of Vaccination

Only three diseases—smallpox, cholera and yellow fever—are the subjects of international certificates of vaccination. Details are given in Appendix A. There is no international certificate of vaccination against typhoid fever, poliomyelitis or any disease other than the three mentioned above.

It is undesirable to vaccinate very young infants against smallpox, unless they are likely to be exposed to risk of contracting this disease. Some countries do not require international certificates of vaccination against smallpox from infants under a specified age. Where there are specific contra-indications to vaccination against smallpox the doctor may provide a certificate stating the medical reason why vaccination has not been performed. Details of the contra-indications to vaccination against smallpox and of the precautions which may be taken to minimise these are contained in the Ministry of Health's Memorandum on Vaccination against Smallpox (HMSO 1967).

RECOGNITION OF DISEASES CONTRACTED ABROAD

When taking a patient's medical history it is advisable always to inquire about travel or residence outside Great Britain. This inquiry made as a routine will alert the doctor to the possibility that the patient may be suffering from a disease contracted abroad. Some

diseases can be readily acquired by ordinary travellers while others seldom occur except among those who have resided abroad and have been intimately or repeatedly exposed to risk of infection. When considering the differential diagnosis it is important to know in what parts of the world the patient has been and for how long; what illnesses he suffered while abroad; what infections he may have encountered there; and how recently he entered or returned to Great Britain.

Intervals between infection and onset of disease

Many infectious diseases have a well-defined incubation period. Susceptible individuals who develop acute clinical manifestations of such diseases may be expected to do so within a limited time from the date of infection. Consideration of the interval which has elapsed since the last possible exposure to infection may serve, in the absence of possibility of exposure to infection in Great Britain, to exclude some of these as causes of the patient's illness. Incubation periods are entered against the diseases included in Appendix B to this memorandum.

Febrile illnesses

It is often difficult on clinical grounds alone to differentiate the numerous varieties of febrile illnesses which may be acquired abroad. When the medical and geographical history of the patient suggests the possibility of an infection of exotic origin then, unless the clinical diagnosis is quite certain, there is need for prompt specialist advice and laboratory investigation.

If the patient has been in any part of the world where malaria occurs, a diagnosis of malaria should always be considered. Blood films, both thick and thin, should be examined in the laboratory at once for malaria parasites. Early recognition and treatment of this disease may be vital to the chances of the patient's recovery. The commonest causes of pyrexia among persons returning from tropical countries are malaria and infections of the urinary and respiratory tracts.

Other important causes of pyrexia among persons who have come from abroad include typhoid or paratyphoid fever, bacillary dysentery, amoebic dysentery or amoebic liver abscess, visceral leishmaniasis, trypanosomiasis, filariasis, plague, typhus, relapsing fever, yellow fever and smallpox. This list is not intended to be exhaustive, since many other febrile diseases may be acquired

abroad, including some, such as diphtheria, brucellosis, leptospirosis, infectious hepatitis, poliomyelitis and tuberculosis, which are also native to Great Britain.

Diarrhoea and Dysentery

Diarrhoea, with or without fever, is common among unacclimatised persons who visit hot countries. The term travellers' diarrhoea, like influenza, may serve to conceal a variety of more serious conditions. Laboratory investigation of faecal specimens is needed to establish a diagnosis.

Diarrhoea is characteristic of cholera, bacillary dysentery, acute amoebic dysentery and food poisoning, including salmonella food poisoning. It may occur as a complication of falciparum malaria, in typhoid or paratyphoid fevers and in the early stages of a variety of helminthic infections. The diarrhoea of cholera is typically watery and dehydration of the patient rapid. In dysentery, either bacillary or amoebic, blood and mucus may be passed in the stools but are not found in all cases.

Intermittent diarrhoea, at first watery and subsequently progressing insidiously to steatorrhoea, with loss of weight, sore tongue and anaemia suggests a diagnosis of sprue.

Anaemia

The investigation of a patient suffering from anaemia should take into account the possibility of an infective factor. Haemorrhage into the gut or bladder or, sometimes, the lungs is a feature of schistosomiasis and intestinal bleeding may result from typhoid infection or from amoebic or bacillary dysentery. The haemorrhages which occur in relapsing fever, leptospirosis, yellow fever and other haemorrhagic fevers may give rise to anaemia. Apart from obvious bleeding the most likely cause of acute anaemia of infective origin is malaria. Hookworm infection is usually associated with anaemia only when the patient's reserves of iron are deficient.

Jaundice

Infectious hepatitis is the commonest of the diseases associated with jaundice, but consideration may need to be given to the possibilities of yellow fever, relapsing fever or leptospirosis. Jaundice occasionally develops in the course of a number of other infectious diseases. It may occur as a result of haemolysis in falciparum malaria. Obstructive jaundice can be produced by liver flukes or occasionally by the presence of other helminths in the liver or biliary system.

Skin lesions

Rashes occur in the course of a number of acute specific fevers. The eruption of typical smallpox begins on the third day of illness and in its early, macular, stage may be mistaken for that of measles. In the vesicular and pustular stages it is most likely to be confused with the rash of chickenpox. Suspicion of smallpox should always be entertained whenever a rash, resembling that of chickenpox, has an atypical appearance or distribution, particularly in an adult or in any person who has recently been in a smallpox endemic area. A haemorrhagic or purpuric eruption in a severely ill person should also suggest the possibility of smallpox.

Hypopigmented macular lesions of the skin, large or small, single or multiple, are common signs of leprosy. In lepromatous leprosy the macules are usually numerous and ill-defined and tend to enlarge and to become confluent. This may precede a generalized thickening of the skin, eventually giving rise to a corrugated appearance—the leonine facies, or a nodular eruption affecting particularly the ears and face.

In tuberculoid leprosy the well-defined hypopigmented lesions, which are never numerous, may be either plaque-like or have a raised papular margin. Except in their earliest stages the lesions of tuberculoid leprosy show some impairment of sensation to light touch and to heat and cold. Small cutaneous nerves in the vicinity of the lesions may be palpable and the corresponding peripheral nerve trunk is frequently enlarged, hard and tender, particularly near a bony prominence. When any patient, who has resided in a part of the world where leprosy is common, presents with an unusual lesion of the skin which does not itch or a lesion which persists despite treatment, the diagnosis of leprosy should always be considered and expert advice sought. This disease is very rarely acquired by ordinary travellers. The small number of cases known in Great Britain have resided for long periods abroad.

Other exotic causes of a variety of skin lesions include leishmaniasis, yaws, fungal infections and allergic reactions to helminthic infections, particularly filariasis, loiasis and onchocerciasis. A maculo-papular rash may be characteristic of onchocerciasis in which single or multiple subcutaneous nodules, particularly on bony prominences on the thorax, pelvis or legs, occur in about one-third of cases. Granulomatous lesions, which progress to ulceration, occur in the tertiary stage of yaws, in leprosy, cutaneous leishmaniasis and various fungal and bacterial infections of the skin.

Disorders of the nervous system (including poliomyelitis)

Many acute febrile diseases may involve the central nervous system. Poliomyelitis remains an important problem in most countries outside Europe, North America, Australia and New Zealand. Encephalomyelitis of virus origin, much of it arthropod-borne, occurs in most tropical and sub-tropical countries. Malaria, which can mimic so many other diseases, should always be considered in the differential diagnosis. A sudden onset of coma may be the presenting feature of falciparum malaria.

A rare cause of encephalomyelitis is rabies. There is usually a history of the patient having been bitten, scratched or licked on a wound or abrasion by an animal while abroad but, if the injury was a trivial one, it may have been forgotten. Rabies in man is invariably fatal.

In African trypanosomiasis (sleeping sickness) the development of meningoencephalitis gives rise to lassitude of insidious onset followed by changes in the patient's personality, querulousness, forgetfulness, drowsiness, emotional instability and mental confusion. Any form of psychosis in a patient who has been in a sleeping sickness endemic area should suggest the possibility of trypanosomiasis. Neurological signs begin to appear some months after the initial febrile stage of the disease and include tremor, especially of the face and tongue, muscular weakness and inco-ordination and sensory changes. The diagnosis can be established by the finding of trypanosomes in the blood, lymph nodes or cerebro-spinal fluid.

Leprosy should be remembered as a cause of peripheral neuropathy, which is sometimes the first manifestation of this disease. The ulnar and the external popliteal nerves are most often affected, the nerve trunks being enlarged, hard and tender.

Lesions of the eye

Trachoma is a disease which it is important to recognise since, if it is allowed to remain untreated, it may lead to ulceration of the cornea with scarring and resultant impairment of vision or complete blindness. The earliest lesions take the form of a follicular conjunctivitis, usually bilateral, beginning in the upper eyelids. Inflammation, with excessive lachrymation, persists and soon involves the scleral conjunctiva and the cornea. The diagnosis is established by the finding of cytoplasmic inclusion bodies in scrapings from the conjunctival epithelium and by the cultivation of the causative virus.

Other exotic diseases which may affect the eye and lead to impairment of vision or blindness include leprosy and onchocerciasis.

PUBLIC HEALTH IMPORTANCE OF DISEASES CONTRACTED ABROAD

Many communicable diseases of tropical or sub-tropical regions are unable to spread in Great Britain because the range of temperature and humidity in this country is not such as to allow the causative agents to complete their life cycle or to permit the survival or propagation of the intermediate hosts and vectors. Although such diseases may be of great importance to the personal health of the immigrant or the returning traveller, they present no hazard to the indigenous population.

Some diseases of exotic origin, of which cholera may be taken as an example, are capable of spreading in a temperate or cold climate but are unlikely to do so where standards of environmental and social hygiene are well maintained. The diseases of greatest importance to the public health in Great Britain are those, such as smallpox, typhoid fever and tuberculosis, which are capable of spreading even in a well-controlled environment.

Smallpox

The speed of modern international travel is such as to render inevitable the entry into Great Britain, from time to time, of persons incubating smallpox. The chief safeguard against this is to ensure that all persons, who arrive in this country from any part of the world where smallpox occurs, are asked to produce evidence of protection against the disease by vaccination or re-vaccination. In spite of this precaution occasional cases still arise either in unvaccinated or in vaccinated individuals and it is of the utmost importance to the public health that such cases should be promptly recognised and appropriate action taken to prevent spread of the disease. It should be emphasised that the possession of a valid international certificate of vaccination is not a guarantee of immunity to smallpox.

A medical practitioner who suspects a patient to be suffering from smallpox would be wise to inform his local medical officer of health immediately. It is a mistake to arrange, without prior consultation, for such a patient to be admitted to an infectious diseases hospital since, if the illness proves to be smallpox, other patients and members of the staff of the infectious diseases hospital will have been placed needlessly at risk of infection. There are special hospitals for patients suffering from, or suspected to be suffering from, smallpox and the medical officer of health can call on the services of certain

designated practitioners for assistance in diagnosis and for advice on the disposal of the patient. It is the responsibility of the medical officer of health to decide whether the patient should be admitted to a smallpox hospital or allowed to remain elsewhere until a firm diagnosis has been established.

Apart from the prompt isolation of the patient, the principal means of controlling an outbreak of smallpox are the tracing, vaccination, or re-vaccination, and surveillance of all known and probable contacts. In the presence of smallpox there is no absolute contra-indication to vaccination. The possible consequences of having to ignore specific contra-indications, e.g. eczema, may be mitigated by the use of human antivaccinial immunoglobulin given into the opposite arm when vaccination has been performed. For further details reference should be made to the Memorandum on the Control of Outbreaks of Smallpox (HMSO 1964) and the Memorandum on Vaccination against smallpox (HMSO 1967).

Typhoid Fever

The epidemiological behaviour of typhoid fever is different from that of smallpox. Although infection may be transmitted to persons who have come into close contact with a case of typhoid fever the usual mode of spread is by means of water or food contaminated with typhoid organisms. Prompt notification of any case is helpful to the medical officer of health in order to enable him to inquire into the sources and vehicles of infection. TAB Vaccination normally plays no part in the control of outbreaks of typhoid fever in Great Britain.

Further information is contained in the Standing Medical Advisory Committee's memorandum on Typhoid and Paratyphoid Fevers (Ministry of Health, July, 1965).

Tuberculosis

Tuberculosis is a special problem among long-term immigrant groups, particularly those of Asian origin. A survey conducted by the Research Committee of the British Tuberculosis Association (Tubercle, June 1966) showed that the incidence of the disease among persons born in India and Pakistan and now resident in England and Wales was, respectively, 12 and 26 times the incidence among persons born in Great Britain. Examination of intending immigrants and their dependants in their country of origin, including X-ray examination of the chest, is clearly desirable and arrange-

ments to this end are in hand with the countries of the Commonwealth. At present all Commonwealth immigrants holding work vouchers are liable to medical examination at the port of arrival. At London Airport, where a considerable proportion of such immigrants enter the country, an X-ray unit has been in operation since 1965 and voucher holders are examined as a routine. Legislation is contemplated to provide powers to examine all immigrants, including dependants.

Whatever the extent of medical examination for tuberculosis, either before or at the time of entry into Great Britain, the follow-up of immigrants after arrival will continue to be important. It is uncertain how many of them arrive with overt disease, how many have inactive lesions which subsequently break down and how many acquire tuberculosis after arrival. At the port of entry the names and destinations of vouchers holders are recorded and sent to the appropriate medical officer of health. Acting on this information local health authorities get in touch with immigrants in order to bring services for the prevention of tuberculosis into operation. Details of the medical arrangements for long-term immigrants were the subject of a letter C/E48/013 which the Chief Medical Officer sent on 4th January 1965 to all doctors.

EXPERT ADVICE ON DISEASES CONTRACTED ABROAD

The family doctor who recognises or suspects that a patient is suffering from a serious communicable disease contracted abroad may wish to have expert advice on the diagnosis and management of the case. The importance of the early recognition of malaria has already been stressed.

In addition to the help available from consultants in infectious diseases, medical officers of health and directors of laboratories, there are two Schools of Tropical Medicine in England and Wales, each of which is associated with a hospital which specialises in the treatment of tropical diseases (see Appendix D).

APPENDIX A

This Notice does NOT APPLY TO RESIDENTS IN NORTHERN IRELAND. The Ministry of Health and Social Services at Dundonald House, Upper Newtownards Road, Belfast 4, issues a separate Notice for those residents, who should send any enquiry on the subject to that address.



NOTICE TO TRAVELLERS

1. Persons going abroad, especially to the tropics or sub-tropics, are warned that they may be exposed to infections not normally prevalent in the United Kingdom. Those needing medical attention shortly after return should inform the doctor that they have been abroad, as this may be relevant to the illness.

2. International Requirements

Many countries, including the United Kingdom itself, require some or all travellers arriving from certain other countries to produce valid International Certificates of vaccination against **smallpox**; some countries also require International Certificates of vaccination against **yellow fever** or **cholera**. It is, therefore, advisable for travellers to certain areas to be vaccinated against these diseases before they leave this country. A basic list of these areas is given below under the heading of each disease. Its accuracy in every case cannot, however, be guaranteed, because countries vary their requirements for incoming travellers in the light of changing conditions. These variations may be substantial, as may happen when there is a smallpox infected local area in the United Kingdom. The alterations are notified internationally through the World Health Organisation (W.H.O.), but may on occasions be made more quickly than the system of notifications can operate. The lists may therefore have to be revised from time to time, and notice of temporary changes will be published as soon as possible, particularly if large numbers of travellers from this country are likely to be affected

by them. In case of doubt, *AUTHORITATIVE INFORMATION CAN NORMALLY BE OBTAINED FROM THE EMBASSY OR MISSION OF THE COUNTRY TO BE VISITED*, and the ultimate responsibility lies, of course, with their Governments. A list of Embassies and Missions is supplied by the Passport Office.

3. Personal Protection

(a) Apart from any requirement by a particular country, **all persons** going abroad are advised to be effectively vaccinated against **typhoid and paratyphoid fevers**, and travellers to any country outside Europe, other than Canada or the United States of America, are advised to be vaccinated against **poliomyelitis**. Since **malaria** is still prevalent in some countries outside Europe, information on the risk of contracting this infection should be obtained from the Embassy or Mission of the country concerned. Persons visiting or passing through malarious areas should take regularly special prophylactic drugs to prevent the development of the infection. Advice on these drugs should be obtained from the traveller's own doctor.

(b) A person who has been bitten or scratched by any animal while abroad should consult a local doctor immediately. It may be necessary to begin a course of vaccination against **rabies** without delay, especially if the animal shows evidence of the disease or cannot be traced. If the owner or person in charge of the animal is known, travellers are advised to take their name and address and to give their own name and address in return, so that information about the animal, including the results of any laboratory tests, can be readily transmitted and received. In the case of a domestic animal, it is also useful to know whether it has been vaccinated against rabies since this would considerably reduce the risk of infection. Rabies in animals does not occur in the British Isles, Malta, Australia, New Zealand or the islands of the Atlantic and Pacific Oceans. It is found in most other parts of the world, including the continent of Europe.

4. International Certificates of Vaccination

(a) Only three forms of **International Certificates of vaccination** have been prescribed—for **smallpox, cholera and yellow fever**—and persons who are being vaccinated against these diseases should, in their own interests, see that their certificates are on the international forms.

(b) The International Sanitary Regulations specify the follow-periods for the validity of International Certificates of vaccination:

Type of Vaccination	Certificate valid for	Period validity begins
Smallpox—primary vaccination if successful	3 years	8 days
„ —revaccination	3 years	At once
Cholera—primary vaccination	6 months	6 days
„ —revaccination within six months	6 months	At once
Yellow fever—primary vaccination	10 years	10 days
„ „ —revaccination within 10 years	10 years	At once

However, the Health Authorities of some countries may in certain circumstances vary these periods, and in case of doubt, enquiry should be made of the Embassy or Mission of the country concerned.

(c) The International Certificate of vaccination against **yellow fever** will be supplied after vaccination at the Centre where the vaccination is done. **The International forms for smallpox and cholera should be obtained by the traveller himself and taken to the doctor for completion.** They can usually be obtained free of charge by the traveller from the company arranging his transport; the Local Authority may also, if necessary, be able to supply them. Otherwise, forms may be obtained from the appropriate address below. **Special attention is draw to Note 2 on the certificates concerning approved stamps.** Normally, except at Yellow Fever Centres, the person vaccinated must have the certificate stamped by the local authority in whose area the vaccinator practises.

(d) There is no International Certificate of vaccination against **typhoid and paratyphoid fevers or poliomyelitis.** For any vaccination for which there is no International Certificate an ordinary certificate by the doctor is sufficient.

5. Arrangements for Vaccination

Vaccination against any disease other than **yellow fever** can be done by a person's own doctor, or exceptionally (by arrangement) at a hospital. **Yellow fever** vaccination can be carried out only at designated Centres, some of which undertake other vaccinations also (see list overleaf). Most Centres make a charge for yellow fever vaccination; no charge may be made for any other vaccination needed for travel abroad, provided it is done under the National Health Service (whether by a person's own doctor or otherwise), but the doctor concerned may charge for issuing an International Certificate. A person requiring vaccination against more than one disease should discuss with the doctor at the earliest opportunity all the vaccinations needed, as they may have to be done in a particular order, depending on the time available for their completion.

6. Vaccination against smallpox

(a) The United Kingdom requires production of a valid International Certificate of vaccination against smallpox from any traveller arriving here directly from:

Africa (including the Cape Verde Islands)

Asia (except Turkey)

The Americas (except U.S.A. and Canada)

Any infected local area elsewhere, as notified by W.H.O.

A traveller from any of these areas who cannot produce a valid certificate on arrival in this country may be offered vaccination. If he refuses vaccination, he may be placed under surveillance (medical supervision) or, if he comes from an infected local area, be kept in isolation.

Certificates are **not** required of travellers from the Azores, the Canary Islands, Greenland, Iceland, Madeira or Malta.

(b) Travellers should also note that the following countries require International Certificates from most categories of arriving travellers, including those arriving direct from the United Kingdom:—

Australia, Canada, Cyprus, New Zealand, the United States of America and most islands in the Caribbean, Indian and Pacific Oceans.

(c) If smallpox occurs in the United Kingdom, European and other countries also may require International Certificates of all travellers from this country, or from the infected local area.

(d) Some countries do not require vaccination certificates from infants under a specified age.

7. Vaccination against cholera

(a) The United Kingdom does not require production of an International Certificate of vaccination against cholera from any arriving traveller.

(b) The requirements of other countries in relation to International Certificates of vaccination against cholera are complex, and subject to frequent alteration. In general, persons undertaking journeys in the Middle or Far East should seek advice from the

Embassy or Mission of the country or countries concerned or from the appropriate address below. Specifically, vaccination is advised for all travellers to:

Burma	Nepal
India	Philippines
Laos	Vietnam
Nauru	Thailand
Pakistan	Any infected local area
Saudi Arabia*	elsewhere, as notified
Sudan*	by W.H.O.

*During the pilgrimage season, (approximately October to April).

Vaccination is recommended in these instances either for the protection of the traveller, or because the country requires certificates from all arriving passengers, or both.

(c) If cases of cholera should occur in the United Kingdom European countries also might require International Certificates from all travellers from this country or from the infected local area.

(d) Some countries do not require vaccination certificates from infants under a specified age.

8. Vaccination against yellow fever

(a) The United Kingdom does not require production of an International Certificate of vaccination against yellow fever from any arriving traveller.

(b) Persons who have been in, or pass through, those parts of Africa or South America where yellow fever is considered to be endemic, and then enter other countries, may be required to hold a valid International Certificate of vaccination against yellow fever. Travellers to these areas should seek advice from the Embassy or Mission of the country or countries concerned or from the appropriate address below.

(c) There are special considerations to be taken into account with yellow fever vaccination:—

(i) When yellow fever vaccine and smallpox vaccine are to be given to the same person it is generally advisable that vaccination against yellow fever should be done first and at least four days before a **primary** vaccination against smallpox. If **primary** vaccination against smallpox is done first,

there should be an interval of twenty-one days before vaccination against yellow fever.

(ii) Vaccination of an infant against yellow fever should be postponed until the age of nine months because of possible ill effects. In exceptional circumstances an infant under nine months of age may be vaccinated against yellow fever but only at the specific request, in writing, of a parent or guardian.

(iii) When, for special reasons, an infant under nine months of age is to be vaccinated against yellow fever and smallpox, there should be an interval of twenty-one days between the vaccinations, no matter which is done first.

(iv) **Yellow fever** vaccination must, for international and technical reasons, be done only at a Centre designated by the Government. A Yellow Fever Vaccination Service, for which in most cases a charge is made, has been established by local health authorities and certain other organisations at the Centres listed—**note particularly what is said at the head of the list.**

MINISTRY OF HEALTH, Alexander Fleming House, Elephant and Castle,
LONDON, S.E.1.

WELSH BOARD OF HEALTH, Cathays Park, CARDIFF.

SCOTTISH HOME AND HEALTH DEPARTMENT, St. Andrew's House,
EDINBURGH, 1.

CENTRES FOR YELLOW FEVER VACCINATION

IMPORTANT.—(1) Every person requiring vaccination **MUST MAKE AN APPOINTMENT WITH THE CENTRE:** at many Centres this may be done by telephone at any time during normal office hours (usually 10.0 a.m. to 5.0 p.m.), where times of attendance are shown, they are given **FOR GUIDANCE ONLY.**

(2) The centres marked ★ undertake other vaccinations as well as vaccination against yellow fever: see paragraph 5 of the text.

Town	Address	Tel. No.	Time of attendance (see Note (1) above)
LONDON BOROUGH OF CAMDEN CORPORATION OF LONDON WESTMINSTER CITY COUNCIL	ENGLAND AND WALES		
	★ Yellow Fever Vaccination Service, Hospital for Tropical Diseases, 4, St. Pancras Way, LONDON, N.W.1.	Euston 4411 Extension 137	Monday to Friday mornings By appointment
	Yellow Fever Vaccination Service Medical Department, Unilever House, Blackfriars, LONDON, E.C.4.	Fleet Street 7474 Extension 2841	Tuesday & Friday 3.45 p.m.
	★ Yellow Fever Vaccination Service 53 Great Cumberland Place, LONDON, W.1.	Ambassador 6456	<i>Yellow fever vaccination:</i> Monday to Friday 9.30 to 10.30 a.m. Tuesday, Wednesday & Thursday 1.30 to 2.30 p.m. <i>Other vaccinations:</i> Monday to Friday 10 a.m. to 5 p.m. By appointment.

CENTRES FOR YELLOW FEVER VACCINATION—continued

Town	Address	Tel. No.	Time of attendance (see Note (1) above)
LONDON BOROUGH OF KINGSTON- UPON-THAMES	Health Centre, Grange Road, KINGSTON-UPON-THAMES.	Kingston 7261	By appointment.
BARNSELY ...	★The Medical Services Clinic, New Street, BARNSELY	Barnsley 3525 or 3232, Ext. 243	By appointment.
BIRMINGHAM ...	★The Public Health Department, Congreve Street, BIRMINGHAM 3.	Birmingham Central 9944 Ext. 3429	Wednesday 2 to 3 p.m. in special circumstances 24 hours' notice if possible
BLACKBURN ...	★Health and Welfare Services Department, Victoria Street, BLACKBURN.	Blackburn 55201 Ext. 102	Monday 4 p.m. By appointment.
BOURNEMOUTH	★The Public Health Department, 17 St. Stephen's Road, BOURNEMOUTH.	Bournemouth 22066	Tuesday 2 to 3 p.m. By appointment.
BRADFORD ...	★Edmund Street Clinic, 26 Edmund Street, BRADFORD 5	Bradford 32505/8	By appointment.
BRIGHTON ...	The Health Department, Royal York Buildings, Old Steine, BRIGHTON 1.	Brighton 29801	By appointment.
BRISTOL ...	★Central Health Clinic, Tower Hill, BRISTOL 2 ...	Bristol 2-6602 Extn. 253	By appointment.

CENTRES FOR YELLOW FEVER VACCINATION—*continued*

Town	Address	Tel. No.	Time of attendance (see Note (1) above)
CAMBRIDGE ...	County Medical Officer of Health, Room 62, Shire Hall, CAMBRIDGE.	Cambridge 58811	Monday 9.30 a.m. Thursday 4.30 p.m. By appointment.
CARDIFF ...	★The Vaccination Clinic, Cardiff Maternity Hospital, Glossop Terrace, CARDIFF.	Cardiff 31033 Ext. 365	Thursday afternoon. By appointment. In special circumstances can be made at other times
CARLISLE ...	The Public Health Clinic, 2, George Street, CARLISLE.	Carlisle 21513	Monday & Thursday 11 a.m. By appointment.
CHELMSFORD ...	The Health Suite, Ground Floor, Block A, County Hall Extension, CHELMSFORD.	Chelmsford 53233 Ext: 2751	Tuesday & Friday afternoon By appointment.
DERBY ...	★Derbyshire County Council Clinic, Cathedral Road, DERBY.	Derby 45934	Monday morning
DONCASTER ...	★Health Offices, York House, Cleveland Street, DONCASTER.	Doncaster 67051-6	Monday 2-4 p.m. By appointment.
EXETER ...	★School Health Department, 1A, Southernhay West, EXETER.	Exeter 77888 Ext. 220	By appointment.
GLOUCESTER ...	★Gloucestershire Royal Hospital, Southgate Street, GLOUCESTER.	Gloucester 23584	Tuesday 10 a.m. to 12 noon By appointment.

CENTRES FOR YELLOW FEVER VACCINATION—continued

Town	Address	Tel. No.	Time of attendance (see Note (1) above)
GRIMSBY ...	Health Department, 1, Bargate, GRIMSBY ...	Grimsby 3108, 4027	By appointment.
HAVERFORD- WEST	County Health Department, Merlins Hill, HAVERFORD- WEST.	Haverfordwest 3345	By appointment. 48 hours' notice.
KINGSTON-UPON -HULL	★76, Lowgate, KINGSTON-UPON-HULL ...	Hull 36880 Ext. 458	Tuesday & Friday 11 a.m. to 12.30 p.m. By appointment.
LANCASTER ...	★Ashton Road Clinic, LANCASTER ...	Lancaster 5339	By appointment.
LEEDS ...	★8, Park Square, LEEDS, 1. ...	Leeds 30661	Wednesday and Friday 3.30 to 4.0 p.m. By appointment.
LEICESTER ...	★Midland House, 52-54, Charles Street, LEICESTER ...	Leicester 25732	By appointment.
LINCOLN ...	★City Health Department, Beaumont Fee, LINCOLN ...	Lincoln 27196	By appointment.
LIVERPOOL ...	★Vaccination Centre, Health Department, Hatton Garden, LIVERPOOL, 3.	Liverpool Central 8433 Ext. 389	Monday to Friday 2 to 4.30 p.m. By appointment.
LIVERPOOL (2nd Centre)	★School of Tropical Medicine, Pembroke Place, LIVER- POOL, 3.	Royal 2298	Tuesday and Friday at 2 p.m. In special circum- stances at other times by appointment.

CENTRES FOR YELLOW FEVER VACCINATION—*continued*

Town	Address	Tel. No.	Time of attendance (see Note (1) above)
MAIDSTONE ...	★Health Department, The County Hall, MAIDSTONE ...	Maidstone 4321 Ext. 487	By appointment.
MANCHESTER ...	★Health Department, Third Floor, Town Hall Extension, MANCHESTER, 2.	Central 3377 Ext. 345	By appointment.
MIDDLES- BROUGH	★Health Department, 26, Southfield Road, MIDDLES- BROUGH.	Middlesbrough 3201	By appointment.
NEWCASTLE- UPON-TYNE	Central School Clinic, 12-18, City Road, NEWCASTLE- UPON-TYNE, 1.	Newcastle-upon- Tyne 25609	By appointment by letter or phone.
NEWPORT ...	Public Health Department, Civic Centre, NEWPORT, Mon.	Newport 65491 Ext: 12.	By appointment.
NORTHAMPTON	County Offices, Guildhall Road, NORTHAMPTON ...	Northampton 34833, Ext. 183 or 190	Thursday 11.45 a.m. to 12.15 p.m. By appointment.
NORWICH ...	★Churchman House, 68, St. Giles Street, NORWICH, Nor. 22E.	Norwich 22233 Ext. 314	By appointment.
NOTTINGHAM ...	134, Mansfield Road, NOTTINGHAM ...	Nottingham 55441	By appointment.
OXFORD ...	Health Department, Greyfriars, Paradise Street, OXFORD.	Oxford 47212	Tuesday 2 to 2.30 p.m. By appointment.

CENTRES FOR YELLOW FEVER VACCINATION—continued

Town	Address	Tel. No.	Time of attendance (see Note (1) above)
PENZANCE ...	Health Clinic Bellair, Alverton, PENZANCE ...	Penzance 2321	Wednesday morning By appointment.
PLYMOUTH ...	The Health Department, Municipal Offices, PLYMOUTH	Plymouth 68000 Extn. 2427	Tuesday 2.30 p.m. By appointment.
SHEFFIELD ...	Orchard Place Welfare Centre, Off Leopold Street, SHEFFIELD, 1.	Sheffield 21157	Tuesday 4 to 5 p.m. By appointment.
SHREWSBURY ...	County Health Department, (2nd Floor, North Block), Shirehall, Abbey Foregate, SHREWSBURY.	Shrewsbury 5221 Ext. 443	First and third Monday each month By appointment.
SOUTHAMPTON	Central Health Clinic, East Park Terrace, SOUTH- AMPTON.	Southampton 28721	Wednesday 2.30 p.m. By appointment.
SOUTHEND-ON- SEA	★Municipal Health Centre, Warrior Square, SOUTHEND- ON-SEA.	Southend-on-Sea 49451	By appointment.
SWANSEA ...	Public Health Department, Guildhall, SWANSEA ...	Swansea 50821	By appointment.
TAUNTON ...	Health Centre, Tower Lane, TAUNTON ...	Taunton 3619	By appointment.
TRURO ...	Health Area Office, The Leats, TRURO ...	Truro 2202	Wednesday morning By appointment.
YORK ...	★Health Services Centre, Duncombe Place, YORK ...	York 54688	By appointment.

CENTRES FOR YELLOW FEVER VACCINATION—continued

Town	Address	Tel. No.	Time of attendance (see Note (1) above)
ABERDEEN ...	SCOTLAND Regional Laboratory, City Hospital, Urquhart Road, ABERDEEN.	Aberdeen 22242 Ext. 5.	Thursday 2.15 p.m. By appointment.
DUNDEE ...	Kings' Cross Hospital, Clepington Road, DUNDEE ...	Dundee 85241	Monday 3 p.m. By appointment.
EDINBURGH ...	Central Vaccination Clinic, 9, Johnston Terrace, EDINBURGH, 1.	Caledonian 4471	Saturdays 10.30 to 12 noon. By appointment only.
GLASGOW ...	★Public Health Clinic, 20, Cochrane Street, GLASGOW, C.I.	Glasgow Central 9600 Ext. 332	Tuesday & Friday 2.30 p.m. By appointment.

APPENDIX B

GEOGRAPHICAL DISTRIBUTION AND INCUBATION PERIODS OF SOME OF THE MORE SERIOUS COMMUNICABLE DISEASES CONTRACTED OUTSIDE GREAT BRITAIN

Amoebiasis (Amoebic Dysentery)

Prevalent in all parts of the world outside the temperate zones.

Incubation period: indeterminate. Clinical attacks may begin at any time from a few days to several years after infection.

Cholera

Endemic in India and the Far East. During recent years outbreaks have occurred in the Middle East, including Iran and Iraq.

Incubation period: from a few hours to 5 days, usually 2 to 3 days.

Dysentery (bacillary)

Occurs in all parts of the world but the more severe forms are commoner outside the temperate zones.

Incubation period: from 1 to 7 days, usually less than 4 days.

Filariasis

Occurs in many parts of Asia, particularly in the Far East, and in the islands of the Pacific Ocean; also in coastal regions of Africa and parts of Central and South America. Prolonged exposure is necessary before infection is likely to become established.

Incubation period: from 8 to 12 months. Allergic manifestations may appear sooner.

Leishmaniasis

Both the visceral and the cutaneous forms of the disease are found in most tropical or sub-tropical countries, mainly in rural areas. The muco-cutaneous form is confined largely to tropical forests in Central and South America.

Incubation period: from a few days to several years.

Leprosy

Transmitted mainly in tropical or sub-tropical countries, particularly India, Pakistan, parts of south-east Asia, much of Africa and parts of Central and South America.

Incubation period: from 7 months to many years, usually about 3 to 5 years until lesions are recognised.

Malaria

Occurs in many parts of tropical and sub-tropical Africa, Asia and Central and South America and in some of the islands of the Pacific Ocean.

Incubation period: from 10 days to many months, depending on the species of parasite. Inadequate doses of suppressive drugs may delay the onset of clinical manifestations of falciparum malaria. Such drugs in adequate doses suppress and cure falciparum malaria, but will only suppress other types of malaria, which may subsequently relapse.

Onchocerciasis

Confined to tropical Africa, the Yemen, certain parts of the mainland of Central America and Venezuela.

Incubation period: several months.

Plague

At the present time the principal area involved is Vietnam. Elsewhere plague is essentially a rural disease acquired from wild rodents in many parts of the world, especially Asia, central and southern Africa, South America and the western United States.

Incubation period: from 2 to 6 days.

Rabies

Animal rabies is found in most parts of the world, including the continent of Europe. It does not occur in the British Isles, Malta, Australia, New Zealand or the islands of the Atlantic and Pacific Oceans.

Incubation period: variable, depending on the site and extent of the initial injury; from 3 weeks to several months.

Relapsing fever

Tick-borne disease is widespread in rural areas of many tropical or sub-tropical countries. Louse-borne disease is limited to a few areas in East Africa, particularly Ethiopia and the Sudan, Asia and South America.

Incubation period: from 2 to 12 days, usually about 8 days.

Schistosomiasis

Occurs in Africa, the Middle East, the Far East and parts of South America and the Caribbean.

Incubation period: from 4 to 6 weeks.

Smallpox

Endemic in parts of Asia, Africa and South America, particularly in India, Pakistan, Indonesia, tropical Africa and Brazil.

Incubation period: from 7 to 16 days, usually 12 days.

Trachoma

Widespread in Asia, parts of Africa and South America, especially in dry and dusty areas, such as Iran and other parts of the Middle East, and occurs in some Mediterranean countries.

Incubation period: from 5 to 12 days, but the early lesions may not be recognised.

Trypanosomiasis

African trypanosomiasis is restricted to well-defined endemic areas in West, Central and East Africa. American trypanosomiasis occurs in rural areas in Central and South America.

Incubation period: from 1 week to many months, usually 2 to 3 weeks.

Tuberculosis

Prevalent throughout the world, particularly in Asia.

Incubation period: variable.

Typhoid Fever

Common in all parts of the world, except Northern Europe, North America, Australia and New Zealand.

Incubation period: from 5 to 23 days, usually 10 to 14 days.

Typhus

Tick-borne and flea-borne disease is widespread in rural areas of many parts of the world. Louse-borne disease occurs in parts of Asia, Africa and Central and South America. Mite-borne disease (scrub typhus) is found in South-east Asia and parts of Northern Australia.

Incubation period: from 2 to 21 days, varying with the rickettsial species responsible. The incubation period of louse-borne typhus is from 6 to 15 days, usually 12 days.

Yellow fever

Confined to Central and South America, including some of the Caribbean islands, and tropical Africa.

Incubation period: from 3 to 10 days, usually 6 days.

APPENDIX C

Geographical Distribution by Regions of some of the more serious communicable diseases which may affect travellers

	Amoebiasis	Cholera	Dysentery	Leishmaniasis	Malaria	Plague	Poliomyelitis	Rabies	Relapsing Fever	Schistosomiasis	Smallpox	Trypanosomiasis	Typhoid Fever	Typhus	Yellow Fever
Regions within the Tropics															
Tropical Africa (West, Central and East)	●		●	○	●	○	●	○	○	●	●	⊙	●	⊙	○
Ethiopia	●		●	○	⊙	○	⊙	○	⊙	●	●		●	●	○
Southern Arabia and Yemen	●		●	○	⊙	○	⊙	○	○	●			●	⊙	
Southern India and Ceylon	●	⊙	●	○	○	○	⊙	○	○		●		●	○	
East Indies and Far East	●	⊙	●	⊙	●	○	●	○		⊙	●		●	●	
Vietnam	●	⊙	●	⊙	●	⊙	●	○					●	⊙	
Northern Australia	●		●		⊙		○						●	⊙	
Pacific Islands	●		●		⊙		○						●	⊙	
Central America	●		●	⊙	⊙	○	●	○	○	○		⊙	●	⊙	○
Caribbean Islands	●		●	○	⊙		⊙	○		⊙			●	⊙	○
Tropical South America	●		●	⊙	●	⊙	●	○	○	●	●	⊙	●	⊙	○
Regions outside the Tropics															
Northern Europe	○		⊙				○	○					○	○	
Southern Europe	⊙		⊙	○			⊙	○	○	○			●	○	
North Africa	●		●	○	⊙		⊙	○	○	⊙			●	○	
South Africa	⊙		⊙		○	○	⊙	○	○	⊙	⊙		●	○	
Egypt and the Middle East	●		●	⊙	⊙	○	⊙	○	○	●			●	⊙	
Pakistan and Northern India	●	⊙	●	⊙	○	○	●	⊙	⊙	○	●		●	⊙	
Far East	⊙		⊙	○	⊙	○	●	○	○	⊙			●	⊙	
Australia and New Zealand	○		⊙				○						○	○	
North America	○		⊙			○	○	○	○				○	○	
Temperate South America	⊙		⊙				⊙	○					●	○	

Key:—

- Indigenous disease absent
- Indigenous disease uncommon
- ⊙ Indigenous disease common in some areas
- Indigenous disease widespread



APPENDIX D

SCHOOLS OF TROPICAL MEDICINE IN ENGLAND AND WALES

London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1.	01-636 8636
Hospital for Tropical Diseases St. Pancras Way, N.W.1.	Euston 4411
Liverpool School of Tropical Medicine Pembroke Place, Liverpool 3	Royal 7611
Sefton General Hospital Smithdown Road, Liverpool 15.	Sefton Park 4020
Royal Infirmary Pembroke Place, Liverpool 3	Royal 5511





